

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

WSOU INVESTMENTS, LLC D/B/A
BRAZOS LICENSING AND
DEVELOPMENT,

Plaintiff,

v.

ARISTA NETWORKS, INC.,

Defendant.

CIVIL ACTION NO. 6:20-cv-01083-ADA

JURY TRIAL DEMANDED

**DECLARATION OF DR. NATHANIEL POLISH IN SUPPORT
OF BRAZOS'S RESPONSE CLAIM CONSTRUCTION BRIEF**

I. INTRODUCTION

1. My name is Dr. Nathaniel Polish. I have been retained by Plaintiff WSOU Investments, LLC (“Brazos”) in the above-captioned case to give my opinions concerning certain technical issues relating to the patents in this case.

2. This declaration sets forth the basis and reasons for my opinion as to how a person of ordinary skill in the art would understand certain claim terms of the patents at issue in these matters.

3. This declaration is based on the information available and known to me as of the date of this declaration. It may be necessary for me to supplement this declaration based on material that subsequently comes to light in this case, and I reserve the right to do so.

4. I have no financial interest in the outcome of this case, in any of the parties of this case, or in any party that is related to the parties in this case. I am being compensated at the rate of \$650 per hour. My compensation is unrelated to the outcome of this litigation.

II. QUALIFICATIONS

A. My curriculum vitae, attached to this declaration as Appendix A, sets forth details of my background and relevant experience. My CV includes a listing of cases for which I have provided expert testimony and a complete list of all my publications.

III. DOCUMENTS REVIEWED

6. In forming my opinions, I have relied on my knowledge and experience in the field, the patents, the file histories, and any document cited within this declaration. I have also seen Brazos’s and defendant’s preliminary proposed constructions for this matter. I have also reviewed Arista’s opening claim construction brief and attached exhibits.

IV. LEGAL STANDARDS

7. I am not an attorney or a patent attorney, and offer no opinions on the law. I have, however, been informed by counsel regarding various legal standards that may apply to this case, and

I have applied those standards where necessary in arriving at my conclusions. My understandings based on those instructions are as follows.

A. LEVEL OF ORDINARY SKILL IN THE ART

8. I understand patents are to be interpreted from the perspective of a person having ordinary skill in the art (“POSITA”) as of the priority date of the patents.

9. I have been informed that a person of ordinary skill in the art is a hypothetical person who has full knowledge of all the pertinent prior art. I understand that courts may consider the following factors in determining the level of skill in the art: (1) type of problems encountered in art, (2) prior art solutions to those problems, (3) rapidity with which innovations are made, (4) sophistication of the technology, and (5) educational level of active workers in the field.

10. In determining the characteristics of a POSITA of the patents at the time of the claimed inventions, I considered each of these factors. Additionally, I understand that the level of ordinary skill in the art must be assessed at the time of the invention and that I should place myself back at the priority dates of each patent discussed below to determine the level of ordinary skill in the art for each patent.

B. CLAIM CONSTRUCTION

11. I have been informed that to determine the meaning of the claims, courts consider the intrinsic evidence, which includes the patent’s claims, written description, prosecution history, materials incorporated by reference in the patent, and prior art cited in the patent or its prosecution history. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. A patentee may also define his or her own terms or disclaim claim scope. The intrinsic record may also resolve ambiguous claim terms where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.

However, particular embodiments and examples appearing in the specification will not generally be read into the claims. A term's context in the asserted claims can also be helpful. Differences among the claim terms can also assist in understanding a term's meaning. For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation.

12. I further understand that extrinsic evidence can be useful in determining the meaning of claim terms. For example, technical dictionaries may be useful to show the manner in which one skilled in the art might use claim terms, but technical dictionaries may provide definitions that are too broad or may not be indicative of how the term is used in context in the patent.

13. I understand that an element in a claim may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or arts described in the specification and equivalents thereof. I understand that claiming a particular element or limitation as a means for performing a specified function is generally referred to as a "means-plus-function" limitation.

14. I understand that to determine whether a particular limitation is a means-plus-function limitation, the first step is to look for the term "means" in the limitation. If it is present, there is a rebuttable presumption that the limitation is a means-plus-function limitation. If the word "means" is not present, there is a rebuttable presumption that the limitation is not a means-plus-function limitation, in which case it should be construed according to its ordinary and customary meaning.

15. Second, I understand that the presumption that the limitation is not a means-plus-function limitation can be overcome by showing that the claim limitation fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function. I understand that the essential inquiry is whether the words of the claim are understood by

persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. I understand that the fact that a particular mechanism is defined in functional terms is not sufficient in and of itself to warrant means-plus-function application. If a particular mechanism has a generally understood meaning in the art, even though the definitions are expressed in functional terms and even though it may not call to mind a single, well-defined structure, the recitation of that mechanism recites sufficient structure to avoid means-plus-function treatment.

16. Where a limitation is a means-plus-function limitation, I understand that the appropriate claim construction analysis is to first identify the claimed function and then to determine what structure, if any, disclosed in the specification corresponds to the claimed function. Structure in the specification qualifies as corresponding structure if the intrinsic evidence clearly links or associates that structure to the function recited in the claim.

C. INDEFINITENESS

17. I have been informed that a patent specification shall conclude with one or more claims particularly pointed out and distinctly claiming the subject matter which the application regards as his or her invention. I understand that a claim which fails to meet this standard is invalid as indefinite. I understand that patent claims are presumed valid, and clear and convincing evidence is required to establish that a patent is invalid because it is indefinite.

18. I understand that indefiniteness is to be evaluated from the perspective of a POSITA at the time of the patent's filing. I understand that a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention. I understand that absolute or mathematical precision in claim language is not required. However, it is not enough that some meaning can be ascribed to a patent's claims. Instead, the claims, when read in light of the intrinsic record, must provide objective boundaries for those of skill in the art.

V. LEVEL OF ORDINARY SKILL

19. I understand that there is a patent asserted relating to data networks and in particular to systems and methods for providing Internet Protocol (“IP”) multicast snooping and routing. I also understand that there is a patent asserted relating to bandwidth allocation and in particular to methods for adjusting bandwidth allocation in a communications network. I also understand that there is a patent asserted relating to intrusion detection systems, and in particular to a mechanism for detection of attacks based on impersonation in a wireless network. For these patents, I conclude that the field of art is data networks. I also conclude that a POSITA in the field of art for these patents would have a bachelor’s degree in computer engineering, electrical engineering, or some similar field, along with two or more years of experience with data networks. Additional education could substitute for some of the experience, and substantial experience could substitute for some of the educational background.

20. I consider myself a person with at least ordinary skill in the art with respect to all of the patents at the time of their priority dates, at least under the description identified above.

21. For each of the patents discussed below, I have considered the meaning of the disputed claim terms from the perspective of a person of ordinary skill in the art at the priority dates that I understand Brazos contends apply to the applicable claims. I have also considered the meaning at alternative dates from the earliest related foreign applications through the actual U.S. application filing date for the patent, and I concluded that my opinions concerning the meaning of the claims would continue to apply even if the priority date is determined to be different than Brazos currently contends.

VI. OVERVIEW OF THE BRAZOS PATENTS

22. U.S. Patent No. 7,409,715 (the “’715 patent”) is entitled “Mechanism for detection of attacks based on impersonation in a wireless network.” I understand that Brazos contends that the asserted claims of the ’715 patent are entitled to a priority date of no later than December 10, 2003.¹

23. U.S. Patent No. 8,472,447 (the “’447 patent”) is entitled “IP multicast snooping and routing with multi-chassis link aggregation.” I understand that Brazos contends that the asserted claims of the ’447 patent are entitled to a priority date of no later than August 4, 2010.²

24. U.S. Patent No. 9,450,884 (the “’884 patent”) is entitled “IP multicast snooping and routing with multi-chassis link aggregation.” I understand that Brazos contends that the asserted claims of the ’884 patent are entitled to a priority date of no later than June 11, 2014.³

25. Throughout this declaration, I will cite to and discuss the “Brazos Patents” as encompassing the ’715 patent, the ’447 patent, and the ’884 patent.

26. The Brazos Patents generally relate to the field of computer networks. More specifically, the ’715 patent relates to an intrusion detection system for detection of impersonation-based attacks in a wireless network. The ’447 patent relates to systems and methods for providing IP multicast snooping and routing. And the ’884 patent relates to methods for adjusting bandwidth allocation by network elements.

VII. U.S. PATENT NO. 7,409,715

27. I understand that two terms are proposed for construction in this patent.

¹ The ’715 patent was originally filed as U.S. Patent Application Serial No. 10/731,029 on December 10, 2003.

² U.S. Patent Application Serial No. 13/010,382, filed January 20, 2011, now U.S. Patent No. 8,472,447, claims the benefit of U.S. Provisional Application Serial No. 61/370,622, filed Aug. 4, 2010.

³ The ’884 patent was originally filed as U.S. Patent Application Serial No. 14/302,052 on June 11, 2014.

A. CONNECTION MEANS BETWEEN THE WIRELESS NODE AND THE INTRUSION DETECTION MODULE FOR PROVIDING THE INTRUSION DETECTION MODULE WITH A COPY OF THE ORIGINAL DATA FRAMES

28. I understand that this term appears in claim 10 of the '715 patent, and that both parties proposed this term for construction.

29. I understand that the respective parties have proposed the following constructions for this phrase:

| Plaintiff's Proposal | Defendant's Proposal |
|---|---|
| <p>Means-plus-function</p> <p>Function: providing the intrusion detection module with a copy of the original data frames transmitted by the wireless node over a wireless interface.</p> <p>Structure: the wireless interface 14 in accordance with the procedures set forth, <i>e.g.</i>, in the specification at 2:17–20; 2:55–64; 2:65–3:6; 3:7–14; 3:41–46; 3:54–63; 4:16–23; and FIG. 1 as well as equivalents thereof</p> | <p>Means-plus-function</p> <p>Function: providing the intrusion detection module with a copy of the original data frames</p> <p>Structure: “secure link 30, operating according to a respective communication protocol” in Figure 1</p> |

30. I understand that the parties have reached an agreement regarding the construction of this term. Thus, I am not providing my opinion as to this term, but I reserve the right to supplement my declaration if Defendant provides additional disclosures about its position and/or modify its position in any manner.

B. MEANS FOR TRANSMITTING OUTGOING DATA FRAMES OVER A WIRELESS INTERFACE

31. I understand that this term appears in claim 17 of the '715 patent, and that both parties proposed this term for construction.

32. I understand that the respective parties have proposed the following constructions for this term:

| Plaintiff's Proposal | Defendant's Proposal |
|-----------------------------|-----------------------------|
| Means-plus-function | Means-plus-function |

| | |
|--|---|
| <p>Function: transmitting outgoing data frames over a wireless interface via a transmitter</p> <p>Structure: the node 10 of a wireless network in accordance with the procedures set forth, <i>e.g.</i>, in the specification at 3:64–4:4; 4:16–23; 4:26–27; 4:44–48; and FIGs. 1–2 as well as equivalents thereof</p> | <p>Function: transmitting outgoing data frames over a wireless interface</p> <p>Structure: “antenna 12” in Figure 1</p> |
|--|---|

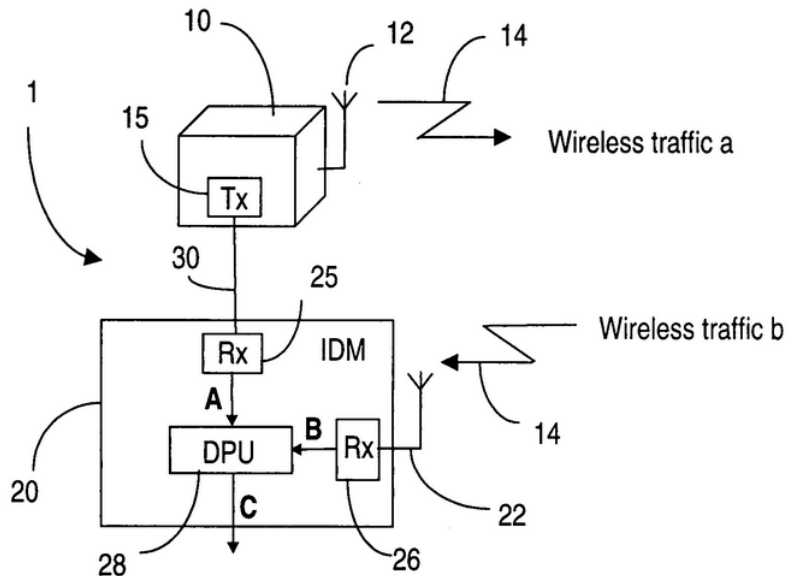
33. Assuming that means-plus-function treatment applies to this term, the first step in the analysis is to identify the function in the claim limitation. It is my opinion that a POSITA would have understood the function of this term to be “transmitting outgoing data frames over a wireless interface via a transmitter” when coupled with the preamble of claim 17 which requires a “wireless node for a wireless network” comprises this claim limitation. ’715 patent at 3:65-4:4.

34. The second step of means-plus-function treatment is to identify the corresponding structure, if any, in the patent specification, which generally describes an impersonation detection system. The specification states that this may take the form of a node which includes a transmitter unit. *See id.* For example, the ’715 patent states: “System 1 includes a respective transmitter unit 15 at node 10, connected to a receiver unit 25 at intrusion detection module 20 over secure link 30, operating according to a respective communication protocol.” *Id.*

35. As disclosed by the ’715 specification, the wireless traffic sent by node 10 is “also sen[t]” as “a copy of the original data A to the intrusion detection module 20 over the secure link 30.” *Id.* at 4:22-23.

36. In addition, the ’715 patent provides that “Node 10 generates original data denoted with A, **which is modulated over the wireless channels that are allocated to node 10**, as well known, and an antenna 12 transmits wireless traffic a over wireless interface 14. **This transmission is performed in the normal fashion for the wireless technology in question**; the transmission technology is not relevant to this invention.” *Id.* at 4:16-23 (emphases added).

37. The '715 patent also illustrates that the node **10** is the common source for transmissions, both across the secure link **30** and the antenna **12**:



Id. at FIG. 1. The '715 patent notes that “that the blocks shown in FIG. 1 represent the logical components of the impersonation detection system. Indeed, these blocks may be integrated in order to build a wireless node with embedded impersonation detection capabilities.” *Id.* at 4:9-15.

38. Further, the '715 patent discloses that the node **10** has channels allocated to it using the receiving antenna as well. *See id.* at 4:26-31 (“The intrusion detection module **20** monitors the channels allocated to node **10** using an antenna **22**. It collects wireless traffic denoted with b on FIG. 1, and a receiver **26** detects data B carried by these channels.”).

39. The '715 patent also provides that the node **10** sends wireless traffic a and received by the intrusion detection module **20**. *See id.* at 4:43-48 (“As indicated above, DPU **28** (see FIG. 1) uses data A **corresponding to the wireless traffic a sent by the wireless node 10** and the incoming data B corresponding to the wireless traffic b received by the intrusion detection module **20**.” (emphases added)).

40. I understand that Defendant proposes that the structure is the “‘antenna 12’ in Figure 1.” This structure is inaccurate as it does not provide how transmissions, like those described above, are accomplished solely through the use of a passive network element like an antenna.⁴ There is no basis for relying on the antenna when the specification clearly discloses that the node generates and sends wireless traffic. In view of the patent specification, the claim language, and my experience, I must disagree with Defendant’s proposed structure. I reserve the right to supplement my declaration if Defendant provides additional disclosure about its position.

41. Therefore, it is my opinion that a POSITA would have understood that the structure in “means for transmitting outgoing data frames over a wireless interface” is the node 10 as well as equivalents thereof.

VIII. U.S. PATENT NO. 8,472,447

42. I understand that three terms are proposed for construction in this patent.

A. CHASSIS MANAGEMENT MODULE

43. I understand that this term appears in claims 1, 5, and 12–14 of the ’447 patent, and that Defendant proposed this term for construction.

44. I understand that the respective parties have proposed the following constructions for this term:

| Plaintiff’s Proposal | Defendant’s Proposal |
|--|--|
| Plain and ordinary meaning; no construction necessary. | Means-plus-function Functions: <ul style="list-style-type: none"> • receiving the snooping information via at least the external ports, storing the snooping information within the database and sharing the snooping information substantially in real-time with the remote aggregation switch via the VFL |

⁴ Defendants’ expert, Dr. Black, provides no explanation as to how the antenna, without the node, is capable of transmission. (See Dkt. 28-13 Decl. of Dr. John Black at ¶ 30.) Nor does Dr. Black address the patent’s disclosures regarding the *node* itself sending wireless traffic. See ’715 patent at 4:43-48.

| Plaintiff's Proposal | Defendant's Proposal |
|----------------------|--|
| | <p>(claims 1, 5, 12-14)</p> <ul style="list-style-type: none"> • ex • determining a multicast index for a received multicast traffic flow to set-up hardware paths for forwarding the received multicast traffic flow to the external ports in a virtual local area network (VLAN) that requested the received multicast traffic flow via the at least one edge node (claims 1, 5, 12-14) • receiving a portion of the snooping information from [sic] the remote aggregation switch via the VFL (claim 5 only) • building the forwarding vector for the receiving multicast traffic flow based on the multicast index (claim 12 only) • allocating the multicast index for the received multicast traffic flow and sharing the multicast index with the secondary switch (claim 13 only) • receiving the multicast index from the primary switch (claim 14 only) <p>Structure: Indefinite</p> <p>Otherwise, even if not means-plus-function, is indefinite.</p> |

45. In my opinion a POSITA would readily understand the term “chassis management module” in the ’447 patent and would apply a plain and ordinary meaning to it.

46. I understand that when a claim term lacks the word “means” there is a presumption that § 112 ¶ 6 does not apply. And that a party seeking to overcome that presumption must supply evidentiary support for its position. I understand that Arista has the burden to demonstrate that the words of the claim are not understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. I also understand that if a limitation recites a term with a known structural meaning, or recites either a known or generic term with a sufficient description of its operation, the presumption against means-plus-function claiming remains intact. I further understand that where a claim term has an understood meaning in the art, it recites sufficient structure and means-plus-function does not apply to that term.

47. The term “chassis management module” is a well-known term of art. This is shown both in the specification and file history as well as the literature, both patent and academic. The specification explains the structure of the chassis management module stating:

The network interface modules 152 and chassis management modules 150 each include one or more processing devices, such as a microprocessor, micro-controller, digital signal processor, microcomputer, central processing unit, field programmable gate array, programmable logic device, state machine, logic circuitry, analog circuitry, digital circuitry, and/or any device that manipulates signals (analog and/or digital) based on hard coding of the circuitry and/or operational instructions. The NIMs 152 and CMMs 150 also include a memory that is an internal memory or an external memory. The memory may be a single memory device or a plurality of memory devices. Such a memory device may be a read-only memory, random access memory, volatile memory, non-volatile memory, static memory, dynamic memory, flash memory, cache memory, and/or any device that stores digital information. In addition, the NIMs 152 and CMMs 150 may implement one or more of their functions via a state machine, analog circuitry, digital circuitry, and/or logic circuitry, the memory storing the corresponding operational instructions may be embedded within, or external to, the circuitry comprising the state machine, analog circuitry, digital circuitry, and/or logic circuitry. Furthermore, the NIMs 152 and CMMs 150 may execute hard-coded and/or software and/or operational instructions stored by the internal memory and/or external memory to perform the steps and/or functions described herein and may be implemented in a single or in one or more integrated circuits.

’447 Patent col.23 ll.25-51

48. The prosecution history also indicates that “chassis management module” was a well-known term with a known structure. In making a non-final rejection, the examiner repeated stated that the prior art Weyman reference taught a “snooper module” that was a chassis management module indicating that the examiner understood the meaning of the term chassis management module.

49. Evidence outside the patent and file history similarly confirm the “chassis management module” is a well-known term with a known structure. Chassis management modules are not only known in the art, but they are also readily available for purchase off the shelf and are made by a number of manufacturers. *See* HardDiskDirect, 00FG624 - IBM FLEX SYSTEM CHASSIS MANAGEMENT MODULE, available at <https://harddiskdirect.com/00fg624-ibm-flex-system-chassis-management-module.html> (last accessed Aug. 6, 2021); DirectMacro, OS8800-CMM -

ALCATEL OS8800 CHASSIS MANAGEMENT MODULE (REFURBISHED), available at <https://directmacro.com/os8800-cmm-alcotel-os8800-chassis-management-module-refurbished.html> (last accessed Aug. 6, 2021); DirectMacro, OS9800-CMM - ALCATEL-LUCENT OS9800 CHASSIS MANAGEMENT MODULE, available at <https://directmacro.com/os9800-cmm-alcotel-lucent-os98.html> (last accessed Aug. 6, 2021); IBM, Flex System Chassis Management Module User's Guide, 5 et passim (7th ed. 2020); Alcatel, OmniSwitch® 8800, at 1, 51–53 et passim (Apr. 2004); Alcatel, OmniSwitch® 9000/9000E, at 12–14 (Aug. 2009); Alcatel-Lucent, Alcatel-Lucent OmniSwitch 9900 Series, at 1–14 (Dec. 2019).

50. Chassis management modules are also well-described in the patent literature. *See, e.g.*, U.S. Patent Nos. 7,173,817, 7,398,401, and 8,166,539 (describing and in some cases claiming chassis management modules); *see also* U.S. Patent No. 11,009,928 (An Arista patent describing “Network device 100 may be a modular chassis-based device that allows some or all of its internal components to be easily swapped into or out of the device chassis . . . network device 100 includes a management module 102 that is communicatively coupled with a number of I/O (input/output) modules 104(1)-(N) via a backplane 106. Management module 102 is generally responsible for executing network control plane and device management functions via one or more general-purpose processors (not shown). Each of these general-purpose processors can operate under the control of a software image that is installed onto the device and maintained in an associated non-transitory memory). A search of the Patent Office’s databases reveals two hundred and one issued patents and two hundred and forty-three patent applications that use the term “chassis management module.” Descriptions of the chassis management module are also found throughout the academic literature, manuals, and presentations. For instance, Kawasaki et al., ATCA Survey Systems for Telecommunications Services, 47 FUJITSU SCI. TECH. J. 215, 217 (2011); Norton et al., Blade Management Controller Rides FPGA Embedded Processor, 68 XCELLENCE IN WIRED COMMS 14, 15, 20 (2009); (Banikazemi et al., Sysman: A

Virtual File System for Cluster System Management, IBM RESEARCH REPORT, at 10, 13 (2007); Lenovo, ThinkSystem SN550 Compute Node Setup Guide, at 5 (2017); Sandeep Singh, What is Chassis Management Controller in UCS, CISCO (2009); IBM, BLADECENTER CHASSIS MANAGEMENT, at 945 (2005); Banikazemi et al., Sysman: A Virtual File System for Managing Clusters, USENIX ASSOCIATION, at 7 (2008); Lennart Johnsson, Professor, Univ. of Houston, The Impact of Moore's Law and Loss of Dennard Scaling, at 15 (Feb. 6, 2015); Hasegawa et al., IP Service Control Point and Signaling Gateway for IP Common Channel Signal Network, 7 NTT DOCOMO TECH. J. 27, 30 (2006)). It is my opinion, in view of the intrinsic and extrinsic evidence as well as my many years of experience that the term "chassis management module" has an understood meaning in the art and a definite meaning as the name for a structure.

51. I understand that the Defendant has proposed that the term "chassis management module" in the '447 patent is indefinite even if it is not a means-plus-function term without providing any grounds or explanation to support its assertion. I have reviewed the '447 patent, its file history, and related materials, and I am not aware of grounds for considering such term indefinite.

52. Furthermore, I agree with Brazos's construction as it is consistent with the understanding of a POSITA at the priority date of the patent. Based on the intrinsic and extrinsic evidence, as well as the knowledge of a POSITA at the time of the '447 patent, it is my opinion that a POSITA would have understood the term "chassis management module" in the '447 patent, with reasonable certainty, and have applied a plain and ordinary meaning. I therefore disagree with Defendant's proposal. I reserve the right to supplement my declaration if Defendant provides disclosures about its position.

B. MULTICAST INDEX

53. I understand that this term appears in claims 1 and 12–15 of the '447 patent, and that Defendant proposed this term for construction.

54. I understand that the respective parties have proposed the following constructions for this term:

| Plaintiff's Proposal | Defendant's Proposal |
|--|--|
| <p>Plain and ordinary meaning; no construction necessary.</p> <p>Alternatively, "a unique identifier assigned to an ingressing multicast flow"</p> | <p>A unique identifier assigned to an ingressing multicast flow based on the IP source, the destination address and ingress VLAN that enables each port to determine whether or not to forward the multicast flow.</p> |

55. In my opinion a POSITA would readily understand the term "multicast index" in the '447 patent and would apply a plain and ordinary meaning to it.

56. The term "multicast index" is a term of art and would be readily understood by a POSITA. The Microsoft Press Computer Dictionary defines "multicasting" as "the process of sending a message simultaneously to more than one destination on a network." *Microsoft Press Computer Dictionary* 301 (3d ed. 1997). Further, IBM's Dictionary of Computing defines "multicast" as "transmission of the same data to a selected group of destinations." *IBM Dictionary of Computing* 443 (10th ed. 1994). While neither dictionary explicitly defines "multicast index," a POSITA would apply the plain and ordinary meanings of the multicast definitions from these dictionaries in combination with the term "index" as it is known in the art. Thus, a POSITA would understand a multicast index to be an identifier associated with the sending/transmitting a message/data to more than one destination. Comparing this plain and ordinary definition to the language found in one of the '447 patent's embodiments, a POSITA would find what is disclosed in the embodiment equivalent.

57. However, a POSITA would only need to perform such a dictionary definition derivation if she were not already aware of "multicast index" as it exists in computer networking operating systems like those written and owned by Arista, Cisco, and other major networking players in the industry. Arista's 7050X Switch Architecture white paper, which provides "provides an overview of the switch architecture and the packet forwarding characteristics of the Arista 7050X Series," discloses Ingress ACL processing block functions where the adjacency points to "Multicast

ID indexes to an entry in the multicast expansion table to provide a list of output interfaces.” ARISTA, ARISTA 7050X SWITCH ARCHITECTURE (‘A DAY IN THE LIFE OF A PACKET’) 1, 12 (2014) (block diagram depicted below).

The logic for multicast traffic is virtually identical, with multicast routes occupying the same tables as the unicast routes. However instead of providing egress port and rewrite information, the adjacency points to a Multicast ID. The Multicast ID indexes to an entry in the multicast expansion table to provide a list of output interfaces.

STAGE 5: INGRESS ACL PROCESSING

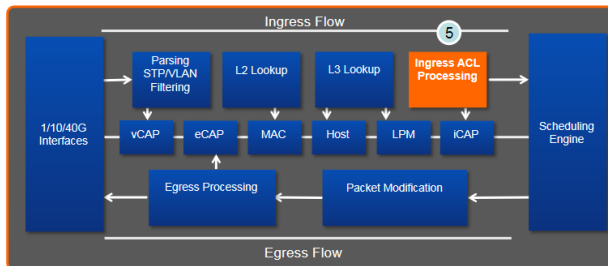


Figure 9: Packet Processor stage 5: Ingress ACL Processing

The Ingress ACL processing block functions as a matching and policy enforcement engine. All policy and matching logic is stored in the iCAP TCAM.

A POSITA would understand the multicast ID and multicast ID indexing disclosed by Arista’s white paper to be equivalent to the derived dictionary definition discussed above. *See* ¶ 55, *supra*; CISCO, NEXUS 7000: M3 MULTICAST FORWARDING 6 (2017) (disclosing the use of a “multicast index” for Cisco’s 7000 series switches). Thus, a POSITA, especially one familiar with Arista’s switches, would understand the term “multicast index” to be a term of art having its plain and ordinary meaning.

58. The ’447 patent’s specification discloses what a “multicast index” is per a single embodiment within the patent. I disagree with Arista’s proposal that the term means “A unique identifier assigned to an ingressing multicast flow based on the IP source, the destination address and ingress VLAN that enables each port to determine whether or not to forward the multicast flow.” While one embodiment of the patent may base the multicast index on the IP source, the destination address and ingress VLAN that enables each port to determine whether or not to forward the multicast flow, a POSITA would not understand the plain and ordinary meaning of the term to require those elements. Likewise, I disagree with Arista’s expert that Brazos’s proposal is “only part of the

definition”—a POSITA would not define the term as *requiring* the additional elements found in the embodiment of the ‘447 patent.⁵ However, I agree with Defendant’s expert insofar as a “multicast index” *may* be based upon them depending upon the particular switch configuration.

59. Based on the intrinsic and extrinsic evidence, as well as the knowledge of a POSITA at the time of the ‘447 patent, it is my opinion that a POSITA would have understood the term “multicast index” in the ‘447 patent, with reasonable certainty, and have applied a plain and ordinary meaning, and understood it to mean “a unique identifier assigned to an ingressing multicast flow.” I agree with Brazos’s proposal that the term be construed according to its plain and ordinary meaning or Brazos’s alternative construction and disagree with Defendant’s proposal. I reserve the right to supplement my declaration if Defendant provides additional disclosure about its position.

IX. U.S. PATENT NO. 9,450,884

60. I understand that one term has been proposed for construction in this patent.

A. THE NETWORK SWITCHING ELEMENT

61. I understand that this term appears in claims 17 and 20 of the ‘884 patent, and that Defendant proposed this term for construction. I understand that the respective parties have proposed the following constructions for this term:

| Plaintiff’s Proposal | Defendant’s Proposal |
|--|-----------------------------|
| Plain and ordinary meaning; no construction necessary. | Indefinite |

62. In my opinion a POSITA would readily understand the term “the network switching element” in the ‘884 patent and would apply a plain and ordinary meaning to it.

63. I understand that in order to prove a claim is indefinite because a claim term is lacking antecedent basis, Defendant must show a clear and convincing evidence of indefiniteness. I also understand that a patent is invalid for indefiniteness if its claims, read in light of the patent’s

⁵ (Dkt. 28-13 Decl. of Dr. John Black at ¶ 76.)

specification and prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention. I also understand that a lack of an antecedent basis does not render a claim indefinite as long as the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by § 112 ¶ 2. Further, I understand that an antecedent basis can be present by implication.

64. I understand that Defendant has proposed that claims 17 and 20 in the '884 patent are indefinite for the lack of antecedent basis for the term “the network switching element.” I have reviewed the '884 patent, its file history and related materials, and I agree with Brazos's construction that the term “the network switching element” in claim 17 is only referring to “an edge switch” and therefore has an antecedent basis by implication. Similarly, the term “the network switching element” in claim 20 is only referring to “an aggregation switch” and therefore has an antecedent basis by implication.

65. I also agree with Brazos's construction that a POSITA can ascertain with reasonable certainty that the term “the network switching element,” when read in light of the '884 patent's specification and prosecution history, should be given a plain and ordinary meaning to refer to switches of the communications network, including one or more of core switch, edge switch, and aggregation switch.

66. Although the specification does not use the term “network switching element,” it is clear from the specification that the term refers to switches of the communications network. For example, the specification defines “switches” as including edge switches, aggregation switches, and core switches and that one or more “switches of communication network” communicates with other network elements. *See* '884 Patent, at 7:65-66; 9:33-35. Further, the specification provides that the network elements in a communications network comprise user agent, switches, network controller, server stacks among others. *See Id.*, at 7:62-66; 12:27-30; 7:7-17; 7:39-43; 9:33-35. In my opinion,

this context from the specification provides sufficient support to provide a plain and ordinary meaning to the term “the network switching elements” to refer to switches of the communications network, including one or more of core switch, edge switch, and aggregation switch.

67. The prosecution history also provides a context for a POSITA to understand the scope of the term “the network switching element” with reasonable certainty. The prior art rejection was overcome by differentiating the ’884 patent to the portion of the network element where the data monitoring is done – the network switches. This shows that the term “the network switching element” is not indefinite but rather to refer to switches of the communications network, including one or more of core switch, edge switch, and aggregation switch. Moreover, the examiner did not reject any claims for indefiniteness.

68. Claim 17 is an apparatus claim for “an edge switch.” In my opinion, a POSITA will ascertain that the term “network switching element” is only referring to the “edge switch” in claim 17. Similarly, claim 20 is an apparatus claim for an “SDN controller” to control “an aggregation switch.” In my opinion, a POSITA will ascertain that the term “network switching element” in claim 20 is only referring to the “aggregation switch.” As such, in my opinion, “the network switching element” has sufficient antecedent basis by implication in both claims 17 and 20.

69. The foregoing opinions were made based on information I have reviewed to date. I reserve the right to alter my opinion in the future should new information be provided to me.

I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

DATED: August 15, 2021

A handwritten signature in blue ink, appearing to read 'Nathaniel Polish', is written above a horizontal line.

Nathaniel Polish, Ph.D.